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What is claimed is:

- A composition for dyeing keratin fibers, said composition comprising, in a medium suitable for dyeing,
 - (i) at least one cationic direct dye of formula (I), (II), (III) or (III') below:

$$A-D=D \xrightarrow{R_3} N \xrightarrow{R_1} R_2$$

$$X \xrightarrow{R_3} R_2$$

$$(1)$$

wherein, in said formula (I):

D represents a nitrogen atom or a -CH group,

 R_1 and R_2 are identical or different and represent a hydrogen atom, a C_1 - C_4 alkyl radical which is unsubstituted or substituted with a -CN, -OH or -NH $_2$ radical, or R_1 and R_2 form, with a carbon atom of the benzene ring, an optionally oxygenated or nitrogenous heterocycle which is unsubstituted or substituted with one or more C_1 - C_4 alkyl radicals, or a 4'-aminophenyl radical;

 R_3 and R'_3 are identical or different and represent a hydrogen atom, a halogen atom selected from chlorine, bromine, iodine and fluorine, a cyano group, a C_1 - C_4 alkyl radical, or a C_1 - C_4 alkoxy or acetyloxy radical;

X represents an anion;

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A represents a group selected from structures A1 to A19 below:

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51

and

wherein

 R_4 represents a C_1 - C_4 alkyl radical which is unsubstituted or substituted with a hydroxyl radical; and

R₅ represents a C₁-C₄ alkoxy radical;

with the proviso that when D represents -CH, A represents A_4 or A_{13} , and R_3 is other than an alkoxy radical, then R_1 and R_2 do not simultaneously represent a hydrogen atom;

$$R_{g}$$

wherein, in said formula (II):

 R_6 represents a hydrogen atom or a C_1 - C_4 alkyl radical;

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 R_7 represents a hydrogen atom, an alkyl radical which is unsubstituted or substituted with a -CN radical or with an amino group, a 4'-aminophenyl radical, or R_7 forms, with R_6 , an optionally oxygenated and/or nitrogenous heterocycle which is unsubstituted or substituted with a C_1 - C_4 alkyl radical;

 R_8 and R_9 are identical or different and represent a hydrogen atom, a halogen atom, a C_1 - C_4 alkyl or C_1 - C_4 alkoxy radical, or a -CN radical;

X represents an anion;

B represents a group selected from structures B1 to B6 below:

$$R_{10}$$
 R_{10}
 R

wherein

R₁₀ represents a C₁-C₄ alkyl radical;

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 R_{11} and R_{12} , which are identical or different, represent a hydrogen atom or a C_1 - C_4 alkyl radical;

$$E-D_{1} = D_{2} - (N)_{m}$$
 R_{13}
 R_{15}
 R_{15}
 R_{15}
 R_{15}
 R_{15}
 R_{16}

(III)

wherein, in said formulae (III) and (III'):

 R_{13} represents a hydrogen atom, a C_1 - C_4 alkoxy radical, a halogen atom, or an amino radical;

 R_{14} represents a hydrogen atom, a C_1 - C_4 alkyl radical, or R_{14} forms, with a carbon atom of the benzene ring, a heterocycle which is optionally oxygenated and/or substituted with one or more C_1 - C_4 alkyl groups;

R₁₅ represents a hydrogen atom or a halogen atom;

 R_{16} and R_{17} , which are identical or different, represent a hydrogen atom or a C_1 - C_4 alkyl radical;

 D_1 and D_2 , which are identical or different, represent a nitrogen atom or a -CH group; m = 0 or 1;

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with the proviso that when R_{13} represents an unsubstituted amino group, then D_1 and D_2 simultaneously represent a -CH group and m=0;

X represents an anion; and

E represents a group selected from structures E1 to E8 below:

E1

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wherein R' represents a C₁-C₄ alkyl radical;

with the proviso that when m = 0 and D_i represents a nitrogen atom, then E can also represent a group of structure E9 below:

wherein R' represents a C₁-C₄ alkyl radical; and

- (ii) at least one cationic or amphoteric substantive polymer selected from the group formed by:
- (a) cellulosic cationic derivatives with the exception of Polyquaternium 10;
- (b) copolymers of dimethyldiallylammonium halide and of (meth)acrylic acid;
- (c) methacryloyloxyethyltrimethylammonium halide homopolymers and copolymers;

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- (d) polyquaternary ammonium polymers selected from:
 - polymers of repeating units having formula (IV) below:

$$\begin{array}{c|c} CH_{3} & CH_{2} \\ \hline & | & | \\ \hline N^{\pm}_{Cl} (CH_{2})_{3} - N^{+} - (C\dot{H}_{2})_{5} \end{array} \\ \hline CH_{3} & CH_{3} \end{array} \qquad (IV)$$

- polymers of repeating units having formula (V) below:

- and polymers of repeating units having formula (VI) below:

$$\begin{array}{c|c}
CH_{3} & CH_{5} \\
\hline
\begin{pmatrix}
CI \\
N \\
-(CH_{2})_{p} & NH-CO-D-NH-(CH_{2})_{p} & N-(CH_{2})_{2} \\
CH_{3} & CH_{3}
\end{array}$$

$$\begin{array}{c|c}
CH_{3} & CH_{5} \\
CH_{2} & CH_{2} & CH_{2} \\
CH_{3} & CH_{3}
\end{array}$$

$$\begin{array}{c|c}
CH_{3} & CH_{5} \\
CH_{2} & CH_{2} & CH_{2}
\end{array}$$

$$\begin{array}{c|c}
CH_{2} & CH_{2} & CH_{2} & CH_{2}
\end{array}$$

$$\begin{array}{c|c}
CH_{2} & CH_{2} & CH_{2} & CH_{2}
\end{array}$$

wherein p represents an integer ranging from 1 to 6 approximately, D is zero or represents a group - $(CH_2)_r$ -CO- wherein r represents a number equal to 4 or 7;

and

- (e) vinylpyrrolidone copolymers containing cationic units.
- 2. A composition according to Claim 1, wherein in said formula (I), (II), (III), or (III'), X represents an anion of chloride, methyl sulfate, or acetate.
- 3. A composition according to Claim 1, wherein said keratin fibers are human keratin fibers.
- 4. A composition according to Claim 3, wherein said human keratin fibers are human hair.
- 5. A composition according to Claim 1, wherein said at least one cationic direct dye of formula (I) is selected from the compounds having structures (I1) to (I51) and (I53) to (I55) below:

$$CH_3$$
 $N = N$
 $N = N$
 CH_3
 CH_3
 CH_3
 CH_3

$$CH_3$$
 $N = N$
 CH_3
 CH_3
 CH_3
 CH_3

$$H_3C-N+$$
 $CH=CH CH_3$
 CH_3
 CH_3

$$H_3C-N+$$
 $CH=CH CH_3$ CI^- (15)

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$$HO-H_4C_2-N+$$
 $CH=CH$
 CH_3
 CH_3
 CH_3
 CH_3

$$H_3C-N+$$
 $CH=CH CH_3$ CI^- (17)

$$CH_3$$
 $N+$
 $N=N$
 CH_3
 $CH_$

$$CH_3$$
 $N+$
 $N=$
 N
 CH_3
 CH_3

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$$CH_3$$
 $N+$
 $N=N$
 CH_3
 $CH_$

$$CH_3$$
 $N+$
 $N=N C_2H_5$
 C_2H_5
 C_2H_5

$$CH_3$$
 $N+$
 $N=N$
 C_2H_4-CN
 C_2H_4-CN
 C_2H_4-CN
 C_2H_4-CN

$$\begin{array}{c|c}
CH_3 \\
N+ \\
N=N- \\
CH_3
\end{array}$$

$$CI^- \qquad (I14)$$

$$CH_3$$
 $N+$
 $N=N CH_3$
 CH_3
 CH

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$$CH_3$$
 N
 $N=N$
 CI
 CH_2 - CH_2 - CH_2 - CH_3
 CI
 CH_2 - CH_3

$$CH_3$$
 N
 $N=N$
 CI
 CH_2 - CH_2 - CN
 CH_3

$$CH_3$$
 N
 N
 CH_3
 CH_3

$$\begin{array}{c|c}
 & CH_3 \\
 & CH_3 \\
 & CH_3
\end{array}$$

$$\begin{array}{c}
 & CH_3 \\
 & CH_3
\end{array}$$

$$\begin{array}{c}
 & CH_3 \\
 & CH_3
\end{array}$$

$$CH_3$$
 $N+N$
 CH_3
 CH_3
 CH_3
 CH_3
 CH_3
 CH_3

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$$CH_3$$
 $N+$
 $N=N$
 CH_3
 $N+$
 CH_3
 CH_3

$$H_3C$$
 N_+
 N_+

$$\begin{array}{c}
CH_3 \\
N \longrightarrow N + \\
CH_3
\end{array}$$

$$CH_3 \qquad CH_3$$

$$CH_3 \qquad CH_3$$

$$CH_3$$
 $N = N$
 $N = N$
 C_2H_5
 CH_3
 CI
 CI
 CI

$$\begin{array}{c} CH_{3} \\ N \\ N \\ CH_{3} \end{array}$$

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$$\begin{array}{c|c}
CH_3 \\
N+ \\
S
\end{array}$$

$$N=N- \\
NH_2 \qquad CI^{-} \qquad (126)$$

$$CH_3$$
 $N+$
 $N=N$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$

$$CH_3$$
 $N+$
 CH_3
 CH

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$$\begin{array}{c|c}
CH_3 \\
N \\
N+ \\
CH_3
\end{array}$$

$$N = N -$$

$$N - NH_2 \qquad CI - (131)$$

$$N+$$
 CH_3
 CH_3
 CH_3
 CH_3

$$CH_3-N+$$
 $N=N CH_3$
 CH_3
 CH_3
 CH_3
 CH_3

$$H_3C-O$$
 $N=N+$
 $N=N$
 $N=N$
 CH_3
 CH_3
 CH_3
 CH_3

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$$N = N +$$
 $N = N +$
 $O-CH_3$
 CH_3
 CH_3

$$H_3C$$
 $N+$
 CH_3
 CH_3
 CH_3
 CH_3
 CH_3

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$$H_3C$$
 $N+$
 CH_3
 CH

$$\begin{array}{c|c}
CH_3 \\
N \\
N+ \\
CH_3
\end{array}$$

$$N = N - N - N - N - N - N - CI^{-1}$$

$$(143)$$

$$CH_3$$
 $N+$
 $N+$
 CH_3
 $CI^ CH_3$
 CH_3

$$CH_3$$
 $N+$
 CH_3
 CH

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$$CH_3$$
 $N+$
 $N=N$
 CH_3
 CH_3
 CH_3
 CH_3
 CH_3

$$CH_3$$
 $N+$
 $N=N$
 CH_3
 CH_3
 CH_3
 CH_3

$$CH_3$$
 $N+$
 $N=N CH_3$
 CH_3
 CH

$$\begin{array}{c}
C_2H_5\\
N+\\
N=N-\\
CH_3
\end{array}$$

$$CH_3SO_2 - (149)$$

$$S$$
 $N+$
 $N=N$
 CI^{-}
 CI^{-}
 CH_{3}

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Attorney Docket No. 5725.0384-00

$$CH_3$$
 $N+$
 $N=N$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$
 $O-CH_3$

$$\begin{array}{c|c} & CH_3 \\ \hline N \\ CH_3 \\ \hline CH_3 \\ \end{array}$$
 CI CH₃ (153)

and

$$CH_3$$
 $N+$
 CH_2 - CH_2 - CN
 $CI^ CH_3$
 CH_3

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- 6. A composition according to Claim 5, wherein said at least one cationic direct dye has structure (I1), (I2), (I14) or (I31).
- 7. A composition according to Claim 1, wherein said at least one cationic direct dye of formula (II) is selected from the compounds having structures (II1) to (II3), (II6), (II6), (II8), and (II10) to (II12) below:

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$$H_3C$$
 $N+-S$
 $N=N$
 CH_3
 CH_3
 CH_3

$$N+$$
 CH_3
 CH_3
 CH_3
 CH_3

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$$CH_3$$
 $N+$ $N=N$ CH_3 CH_3 CH_3

$$H_3C$$
 $N+$
 $N=N$
 CH_3
 $CH_$

$$H_3C$$
 $N+$
 $N=N$
 CH_3
 CH_3
 CH_3
 CH_3
 CH_3

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$$\begin{array}{c|c}
CH_3 \\
N-N+\\
N=N-\\
N=N-\\
CH_3
\end{array}$$
 $\begin{array}{c}
CH_3 \\
CH_3 \\
CH_3
\end{array}$
 $\begin{array}{c}
CH_3SO_4 - (II12)
\end{array}$

8. A composition according to Claim 1, wherein said at least one cationic direct dye of formula (III) is selected from the compounds having structures (III1) to (III18) below:

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$$\begin{array}{c|c} S \\ CH = N - N \\ CH_3 \end{array} \qquad CI \qquad (III1)$$

$$H_3C$$
 N
 $CH=N-N$
 CH_3
 CH_3
 CH_3
 CH_3

$$H_3C-N+$$
 $CH=N-N$
 CH_3SO_4 (III4)

$$H_3C-N+$$
 $CH=N-N CH_3$
 $CI^ CH_3$
 CH_3
 $CI^ CH_3$
 CH_3
 C

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Attorney Docket No. 5725.0384-00

$$CH_3$$
 CH_3
 CH_3

$$H_3C-N+$$
 $CH=N-N CH_3$
 CI^- (III8)

$$H_3C-N+$$
 $CH=N-N$
 CH_3
 CI
 CI
 CI
 $CIII9)$

$$CH_{3} CH = N - N - CH_{3} C$$

$$CH=N-N$$
 CH_3SO_4
 CH_3SO_4
 CH_3SO_4

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$$CH = N - N - CH_3$$

$$CH_3$$

$$CH_3$$

$$CH_3$$

$$CH_3$$

$$CH_3$$

$$CH_3$$

$$CH_3$$

$$CH_3$$

$$H_3C-N+$$
 $CH=N-N$
 CH_3
 CH_3SO_4
 CH_3SO_4
 CH_3SO_4

$$CH = CH - CH_2 CH_3 COO^-$$
 (III15)

$$H_3C-N+$$
 $CH=CH NH_2$
 CH_3COO^- (III16)

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$$H_3C-N+$$
 $CH=N-N$
 CH_3
 CI^-
(III17)

and

$$CI$$
 $N=N$
 $N+$
 CH_3
 $CI^ CI^ CH_3$

- 9. A composition according to Claim 8, wherein said at least one cationic direct dye of formula (III) has structure (III4), (III5) or (III13).
- 10. A composition according to Claim 1, wherein said at least one cationic direct dye of formula (III') is selected from the compounds having structures (III'1) to (III'3) below:

$$CH_{\overline{3}}N+$$
 $CH=CH$
 NH
 CI^{-}
 $(III'2)$

and

$$CH_3$$
 N
 N
 CH_3
 CH_3
 CH_3
 CH_3
 CH_3
 CH_3

- 11. A composition according to Claim 1, wherein said at least one cationic direct dye of formulae (I), (II) or (III') is present in an amount ranging from about 0.001 to about 10% by weight relative to the total weight of the composition.
- 12. A composition according to Claim 11, wherein said at least one cationic direct dye of formulae (I), (II) or (III') is present in amount ranging from about 0.005 to about 5% by weight relative to the total weight of the composition.
 - 13. A composition according to Claim 1, wherein said at least one

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cationic or amphoteric substantive polymer is Polyquaternium 24.

- 14. A composition according to Claim 1, wherein said at least one cationic or amphoteric substantive polymer is a copolymer of dimethyldiallylammonium chloride and of acrylic acid (80/20 by weight).
- 15. A composition according to Claim 1, wherein said at least one cationic or amphoteric substantive polymer is a crosslinked poly(methacryloyloxyethyltrimethylammonium chloride) homopolymer, as a 50% dispersion in mineral oil; the crosslinked copolymer of acrylamide and of methacryloyloxyethyltrimethylammonium chloride (20/80 by weight), as a 50% dispersion in mineral oil; or the methosulphate of the copolymer of methacryloyloxyethyl-trimethylammonium and of methacryloyloxyethyldimethyl-acetylammonium.
- 16. A composition according to Claim 1, wherein said at least one cationic or amphoteric substantive polymer is:
- a) a vinylpyrrolidone polymer containing dimethylaminoethyl methacrylate units;
- b) a vinylpyrrolidone polymer containing methacrylamidopropyltrimethylammonium units; or
- c) a vinylpyrrolidone polymer containing methylvinylimidazolium units.
- 17. A composition according to Claim 1, wherein said at least one cationic or amphoteric substantive polymer is present in an amount ranging from about 0.01 to about 10% by weight relative to the total weight of the composition.

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- 18. A composition according to Claim 17, wherein said at least one cationic or amphoteric substantive polymer is present in an amount ranging from about 0.1 to about 5% by weight relative to the total weight of the composition.
- 19. A composition according to Claim 1, wherein said medium suitable for dyeing comprises water or a mixture of water and at least one organic solvent.
- 20. A composition according to Claim 1, wherein said composition has a pH ranging from about 2 to about 11.
- 21. A composition according to Claim 20, wherein said composition has a pH ranging from about 5 to about 10.
- 22. A composition according to Claim 1, further comprising at least one additional direct dye.
- 23. A composition according to Claim 22, wherein said at least one additional direct dye is a nitrobenzene dye, anthraquinone dye, naphthoquinone dye, triarylmethane dye, xanthine dye, or an azo dye that is non-cationic.
- 24. A composition according to Claim 1, further comprising at least one oxidation base selected from para-phenylenediamines, bis(phenyl)alkylenediamines, para-aminophenols, ortho-aminophenols and heterocyclic bases.
- 25. A composition according to Claim 24, wherein said at least one oxidation base is present in an amount ranging from about 0.0005 to about 12% by weight relative to the total weight of the dye composition.
 - A composition according to Claim 25, wherein said at least one

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oxidation base is present in an amount ranging from about 0.005 to about 6% by weight relative to the total weight of the dye composition.

- 27. A composition according to Claim 24, further comprising at least one coupler selected from meta-phenylenediamines, meta-aminophenols, meta-diphenols and heterocyclic couplers.
- 28. A composition according to Claim 27, wherein said at least one coupler is present in an amount ranging from about 0.0001 to about 10% by weight relative to the total weight of the dye composition.
- 29. A composition according to Claim 28, wherein said at least one coupler is present in an amount ranging from about 0.005 to about 5% by weight relative to the total weight of the dye composition.
- 30. A composition according to Claim 1, further comprising at least one oxidizing agent.
- 31. A composition according to Claim 30, wherein said at least one oxidizing agent is hydrogen peroxide, urea peroxide, alkali metal bromate, a persalt, or an enzyme.
- 32. A method for dyeing keratin fibers, said method comprising applying at least one dyeing composition according to Claim 1 to said keratin fibers, and allowing said at least one dyeing composition to remain on said keratin fibers for a period of time sufficient to develop the desired coloration.
 - 33. A method for dyeing keratin fibers according to Claim 32, further

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comprising rinsing said keratin fibers after said period of time sufficient to develop the desired coloration.

- 34. A method for dyeing keratin fibers according to Claim 33, further comprising, after said rinsing, washing said keratin fibers with shampoo, rinsing said keratin fibers again, and drying said keratin fibers.
- 35. The method according to Claim 33, wherein said period of time ranges from 3 to 60 minutes.
- 36. The method according to Claim 35, wherein said period of time ranges from 5 to 40 minutes.

37.

(1) mixing a composition (A1), said composition (A1) comprising at least one cationic direct dye of formula (I), (II), (III) or (III') as defined in Claim 1, and at least one oxidation base with a composition (B1), said composition (B1) comprising, in a medium suitable for dyeing, at least one oxidizing agent,

A method for dyeing keratin fibers, said method comprising

one cationic or amphoteric substantive polymer as defined in Claim 1, and

wherein said composition (A1) or said composition (B1) contains at least

(2) applying said mixture of said composition (A1) and said composition (B1) to said keratin fibers for a period of time sufficient to dye said keratin fibers, wherein said mixing occurs before the time of application to said keratin fibers.

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- 38. A method for dyeing keratin fibers, said method comprising

 (1) mixing a composition (A2), said composition (A2) comprising at least one cationic direct dye of formula (I), (II), (III) or (III') as defined in Claim 1, with a composition (B2), said composition (B2) comprising, in a medium suitable for dyeing, at least one oxidizing agent, wherein said composition (A2) or said composition (B2) contains at least one cationic or amphoteric substantive polymer as defined in Claim 1, and
- (2) applying said mixture of said composition (A2) and said composition (B2) to said keratin fibers for a period of time sufficient to dye said keratin fibers, wherein said mixing occurs before the time of application to said keratin fibers.
- 39. A multi-compartment dyeing device or multi-compartment dyeing kit for dyeing keratin fibers comprising at least two compartments, wherein
 - a first compartment comprises a composition (A1) as defined in Claim 37, and
- a second compartment comprises a composition (B1) as defined in Claim 37.
- 40. A multi-compartment dyeing device or multi-compartment dyeing kit for dyeing keratin fibers comprising at least two compartments, wherein
 - a first compartment comprises a composition (A2) as defined in Claim 38, and
 - a second compartment comprises a composition (B2) as defined in Claim 38.
 - 41. A composition according to Claim 1 in the form of a liquid, a

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shampoo, a cream, or a gel.

42. A composition according to Claim 41 in the form of a shampoo.

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